WHAT IS CLAIMED IS:

1. A pharmaceutical formulation, comprising:

(a) a mineral-based, negatively charged adjuvant; and,

(b) a polynucleotide vaccine encoding at least one antigen, such that introduction of said formulation into a vertebrate host results in expression of a biologically effective amount of said antigen or antigens so as to induce a prophylactic or therapeutic immune response.

2. A pharmaceutical formulation of claim 1 wherein said mineral adjuvant is an aluminum phosphate-based adjuvant.

3. A pharmaceutical formulation of claim 2 wherein the molar PO_4/Al ratio of said aluminum phosphate-based adjuvant does not substantially bind to nucleic acid molecules.

4. A pharmaceutical formulation of claim 3 wherein said molar PO_4/Al ratio is about 0.9.

5. A pharmaceutical formulation of claim 3 wherein said aluminum-phosphate based adjuvant is Adju-Phos®.

6. A pharmaceutical formulation of claim 4 wherein said aluminum-phosphate based adjuvant is Adju-Phos®.

7. A pharmaceutical formulation of claim 5 wherein said polynucleotide vaccine expresses said antigen or antigens so as to induce a prophylactic or therapeutic immune response against a disease or disorder selected from the group consisting of human immunodeficiency virus, herpes simplex virus, human influenza, hepatitis A, hepatitis B, hepatitis C, human papilloma virus, tuberculosis, tumor growth, autoimmune disorders and allergies.

8. A pharmaceutical formulation of claim 6 wherein said polynucleotide vaccine expresses said antigen or antigens so as to induce a prophylactic or therapeutic immune response against a disease or disorder selected from the group consisting of human immunodeficiency virus, herpes simplex virus, human influenza, hepatitis A, hepatitis B, hepatitis C, human papilloma virus, tuberculosis, tumor growth, autoimmune disorders and allergies.

9. A pharmaceutical formulation of claim 5 wherein said polynucleotide vaccine expresses said antigen or antigens so as to induce a prophylactic or therapeutic immune response against a veterinary disease or disorder selected from the group consisting of rabies, distemper, foot and mouth disease, anthrax, bovine herpes simplex and bovine tuberculosis.

10. A pharmaceutical formulation of claim 6 wherein said polynucleotide vaccine expresses said antigen or antigens so as to induce a prophylactic or therapeutic immune response against a veterinary disease or disorder selected from the group consisting of rabies, distemper, foot and mouth disease, anthrax, bovine herpes simplex and bovine tuberculosis.

11. A pharmaceutical formulation of claim 7 wherein said polynucleotide vaccine is a DNA plasmid.

12. A pharmaceutical formulation of claim 8 wherein said polynucleotide vaccine is a DNA plasmid.

13. A pharmaceutical formulation of claim 9 wherein said polynucleotide vaccine is a DNA plasmid.

14. A pharmaceutical formulation of claim 10 wherein said polynucleotide vaccine is a DNA plasmid.

15. A method of inducing an immune response in an vertebrate host which comprises introducing the pharmaceutical formulation of claim 3 into said vertebrate host.

16. A method of inducing an immune response in an vertebrate host which comprises introducing the pharmaceutical formulation of claim 4 into said vertebrate host.

17. A method of inducing an immune response in an vertebrate host which comprises introducing the pharmaceutical formulation of claim 5 into said vertebrate host.

18. A method of inducing an immune response in an vertebrate host which comprises introducing the pharmaceutical formulation of claim 6 into said vertebrate host.

19. The method of claim 15 wherein introduction of said pharmaceutical formulation is introduced into said host as selected from the group consisting of parenteral, inhalation, and oral delivery.

20. The method of claim 16 wherein introduction of said pharmaceutical formulation is introduced into said host as selected from the group consisting of parenteral, inhalation, and oral delivery.

21. The method of claim 17 wherein introduction of said pharmaceutical formulation is introduced into said host as selected from the group consisting of parenteral, inhalation, and oral delivery.

22. The method of claim 18 wherein introduction of said pharmaceutical formulation is introduced into said host as selected from the group consisting of parenteral, inhalation, and oral delivery.

23. The method of claim 19 wherein said method of introduction is intramuscular.

24. The method of claim 20 wherein said method of introduction is intramuscular.

25. The method of claim 21 wherein said method of introduction is intramuscular.

26. The method of claim 22 wherein said method of introduction is intramuscular.

27. A pharmaceutical formulation of claim 1 wherein said mineral adjuvant is a calcium phosphate-based adjuvant.

28. A pharmaceutical formulation of claim 27 wherein said polynucleotide vaccine expresses said antigen or antigens so as to induce a prophylactic or therapeutic immune response against a disease or disorder selected from the group consisting of human immunodeficiency virus, herpes simplex virus, human influenza, hepatitis A, hepatitis B, hepatitis C, human papilloma virus, tuberculosis, tumor growth, autoimmune disorders and allergies.

29. A pharmaceutical formulation of claim 27 wherein said polynucleotide vaccine expresses said antigen or antigens so as to induce a prophylactic or therapeutic immune response against a veterinary disease or disorder selected from the group consisting of rabies, distemper, foot and mouth disease, anthrax, bovine herpes simplex and bovine tuberculosis.

30. A pharmaceutical formulation of claim 28 wherein said polynucleotide vaccine is a DNA plasmid.

31. A pharmaceutical formulation of claim 29 wherein said polynucleotide vaccine is a DNA plasmid.

32. A method of inducing an immune response in an vertebrate host which comprises introducing the pharmaceutical formulation of claim 27 into said vertebrate host.

33. A method of inducing an immune response in an vertebrate host which comprises introducing the pharmaceutical formulation of claim 28 into said vertebrate host.

34. A method of inducing an immune response in an vertebrate host which comprises introducing the pharmaceutical formulation of claim 29 into said vertebrate host.

35. The method of claim 32 wherein introduction of said pharmaceutical formulation is introduced into said host as selected from the group consisting of intramuscular, inhalation, and oral delivery.

36. The method of claim 33 wherein introduction of said pharmaceutical formulation is introduced into said host as selected from the group consisting of intramuscular, inhalation, and oral delivery.

37. The method of claim 34 wherein introduction of said pharmaceutical formulation is introduced into said host as selected from the group consisting of intramuscular, inhalation, and oral delivery.

38. The method of claim 35 wherein said method of introduction is intramuscular.

39. The method of claim 36 wherein said method of introduction is intramuscular.

40. The method of claim 37 wherein said method of introduction is intramuscular.